

WHAT IS CLAIMED IS:

1. A method for reducing particulate emissions during combustion of a hydrocarbon fuel which comprises combusting an emulsion of a hydro-
5 carbon fuel and water wherein the fuel is a Fischer-Tropsch (FT) derived hydrocarbon as a mixture of a FT fuel and a conventional fuel, and in which emulsion, a major portion of the hydrocarbon has particle sizes of 1 micron or less.

10 2. The method of claim 1 wherein the emulsion is a hydrocarbon-in-water emulsion.

3. The method of claim 2 wherein the fuel is a FT derived fuel.

15 4. The method of claim 3 wherein greater than 50% of the hydrocarbon particles are in the range of about 0.1 to about 1.0 microns in size.

5. The method of claim 4 wherein the volume ratio of hydrocarbon to water is in the range of 95:5 to 60:40.

20 6. The method of claim 5 wherein greater than 80% of the hydrocarbon particles are in the range of about 0.1 to about 1.0 microns in size.

7. The method of claim 6 wherein the Fischer-Tropsch derived hydrocarbon boils in the diesel fuel range.

25 8. The method of claim 7 wherein the emulsion has a viscosity in the range of about 50 to 200 mm²/sec.

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9. A method for forming a fuel in water emulsion which when combusted has reduced particulate matter emissions compared with Swedish Class I Diesel Fuel comprising shearing a Fischer-Tropsch derived hydrocarbon boiling in the diesel fuel range and water in the volume ratio of hydrocarbon to water of 95:5 to 40:60 and about 0.05 to about 5.0 wt% based on the weight of hydrocarbon and water with a non-ionic surfactant or mixtures thereof having a HLB of about 5 to about 30 under shearing conditions sufficient to produce a liquid emulsion in which a major portion of the hydrocarbon has particle sizes of 1 micron or less.

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10. A liquid fuel composition comprising an emulsion of FT derived fuel in water wherein the fuel in the emulsion has fuel particle sizes predominately of 1 micron or less and the emulsion has a viscosity of above about 50 mm²/sec at 20°C.

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11. The composition of claim 10 wherein greater than 50% of the fuel particles has particle sizes in the range of about 0.1 to about 1.0 microns.

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12. The composition of claim 11 wherein the Fischer-Tropsch derived fuel boils in the diesel fuel range.

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